

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

Listing of the Claims:

1-24. (Cancelled)

25. (Previously Amended) A method of treating a patient with diabetes mellitus, comprising the steps of:

- (a) isolating a nestin-positive pancreatic stem cell from a pancreatic islet of a donor;
- (b) expanding the stem cell to produce a progenitor cell;
- (c) differentiating the progenitor cell in culture to form pseudo-islet like aggregates; and
- (d) transferring the pseudo-islet like aggregates into the patient,

wherein the patient does not serve as the donor for said stem cells of step (a), and wherein said transferring step (d) treats diabetes mellitus.

26. (Previously Amended) The method of claim 25, wherein the patient is a human and the donor for said stem cells of step (a) is a non-human mammal.

27. (Original) The method of claim 25 or 26, wherein the patient is not treated with an immunosuppressive agent prior to step (b).

28. (Previously Amended) The method of claim 25, wherein the step of expanding is performed in the presence of an agent selected from the group consisting of Epidermal Growth Factor (EGF), basic Fibroblast Growth Factor-2 (bFGF-2), high glucose, Keratinocyte Growth Factor (KGF), Hepatocyte Growth Factor/Scatter Factor (HGF/SF), Glucagon-like-Peptide-1 (GLP-1), exendin-4, Islet/Duodenum Homeobox-1 (IDX-1), a nucleic acid molecule encoding Islet/Duodenum Homeobox-1 (IDX-1), betacellulin, activin A, Transforming Growth Factor-

β (TGF- β), and combinations thereof.

5 ~~29~~. (Original) The method of claim 25, wherein the step of transferring is performed via endoscopic retrograde injection.

6 ~~30~~. (Original) The method of claim 25 additionally comprising the step of:

(e) treating the patient with an immunosuppressive agent.

7 ~~31~~. (Original) The method of claim 30 wherein said immunosuppressive agent prevents an immune response.

8 ~~32~~. (Original) The method of claim 30 wherein said immunosuppressive agent delays the occurrence of an immune response.

9 ~~33~~. (Original) The method of claim 30 wherein said immunosuppressive agent decreases the intensity of an immune response.

10 ~~34~~. (Original) The method of claim 30, 31, 32 or 33 wherein the immune response is transplant rejection.

11 ~~35~~. (Original) The method of claim 30, wherein the immunosuppressive agent is selected from the group consisting of FK-506, cyclosporin, and GAD65 antibodies.

~~36-66. (Cancelled)~~

12 ~~67~~. (Original) A method of transplanting into a mammal, comprising the steps of:

(a) isolating a nestin-positive pancreatic stem cell from a pancreatic islet of a donor;

(b) expanding the stem cell to produce a progenitor cell;

(c) differentiating the progenitor cell in culture to form pseudo-islet like aggregates; and

(d) transferring the pseudo-islet like aggregates into the mammal.

- 13 68. (Amended) The method of claim ¹²67, wherein the mammal serves as the donor for said stem cells of step (a).
- 14 69. (Previously Amended) The method of claim ¹²67, wherein the mammal does not serve as the donor for said stem cells of step (a).
- 15 70. (Original) The method of claim ¹²67, wherein the mammal is a human and the donor for said stem cells of step a is a non-human mammal.
- 16 71. (Original) The method of claim ¹⁴69 or ¹⁵70, wherein the mammal is not treated with an immunosuppressive agent prior to step (b).
- 17 72. (Previously Amended) The method of claim ¹²67, wherein the step of expanding is performed in the presence of an agent selected from the group consisting of Epidermal Growth Factor (EGF), basic Fibroblast Growth Factor-2 (bFGF-2), high glucose, Keratinocyte Growth Factor (KGF), Hepatocyte Growth Factor/Scatter Factor (HGF/SF), Glucagon-like-Peptide-1 (GLP-1), exendin-4, Islet/Duodenum Homeobox-1 (IDX-1), a nucleic acid molecule encoding Islet/Duodenum Homeobox-1 (IDX-1), betacellulin, activin A, Transforming Growth Factor- β (TGF- β), and combinations thereof.
- 18 73. (Original) The method of claim ¹²67, wherein the step of transferring is performed via endoscopic retrograde injection.

19 74. (Original) The method of claim ¹²67 additionally comprising the step of:

(e) treating the mammal with an immunosuppressive agent.

- 20 75. (Original) The method of claim ¹⁹74 wherein said immunosuppressive agent prevents an immune response.
- 21 76. (Original) The method of claim ¹⁹74 wherein said immunosuppressive agent delays the occurrence of an immune response.
- 22 77. (Original) The method of claim ¹⁹74 wherein said immunosuppressive agent decreases the

intensity of an immune response.

23 78. (Original) The method of claim ²⁰75, ²¹76 or ²²77 wherein the immune response is transplant rejection.

24 79. (Original) The method of claim ¹⁹74, wherein the immunosuppressive agent is selected from the group consisting of FK-506, cyclosporin, and GAD65 antibodies.

80-127. (Cancelled)

25 128. (New) A method of treating a subject with diabetes mellitus, comprising the steps of:

- (a) isolating a nestin-positive pancreatic stem cell from a pancreatic islet of a human donor;
- (b) expanding the stem cell to produce a progenitor cell;
- (c) differentiating the progenitor cell in culture to form pseudo-islet like aggregates; and
- (d) transferring the pseudo-islet like aggregates into said subject,

wherein said subject does not serve as the donor for said stem cells of step (a), and wherein said transferring step (d) treats diabetes mellitus.

26 129. (New) The method of claim ²⁵128, wherein said subject is not treated with an immunosuppressive agent prior to step (b).

27 130. (New) The method of claim ²⁵128, wherein the step of expanding is performed in the presence of an agent selected from the group consisting of Epidermal Growth Factor (EGF), basic Fibroblast Growth Factor-2 (bFGF-2), high glucose, Keratinocyte Growth Factor (KGF), Hepatocyte Growth Factor/Scatter Factor (HGF/SF), Glucagon-like-Peptide-1 (GLP-1), exendin-4, Islet/Duodenum Homeobox-1 (IDX-1), a nucleic acid molecule encoding Islet/Duodenum Homeobox-1 (IDX-1), betacellulin, activin A, Transforming Growth Factor- β (TGF- β), and combinations thereof.

28 131. (New) The method of claim ²⁵128, wherein the step of transferring is performed via

endoscopic retrograde injection.

27 132. (New) The method of claim ³⁵128 additionally comprising the step of:

(e) treating said subject with an immunosuppressive agent.

50 133. (New) The method of claim ²⁹132 wherein said immunosuppressive agent prevents an immune response.

31 134. (New) The method of claim ²⁹132 wherein said immunosuppressive agent delays the occurrence of an immune response.

32 135. (New) The method of claim ²⁹132 wherein said immunosuppressive agent decreases the intensity of an immune response.

33 136. (New) The method of claim ³⁰133, ³¹134 or ³²135 wherein the immune response is transplant rejection.

34 137. (New) The method of claim ²⁹132, wherein the immunosuppressive agent is selected from the group consisting of FK-506, cyclosporin, and GAD65 antibodies.

35 138. (New) A method of transplanting into a mammal, comprising the steps of:

(a) isolating a nestin-positive pancreatic stem cell from a pancreatic islet of a human donor;

(b) expanding the stem cell to produce a progenitor cell;

(c) differentiating the progenitor cell in culture to form pseudo-islet like aggregates; and

(d) transferring the pseudo-islet like aggregates into the mammal.

36 139. (New) The method of claim ³⁵138, wherein the mammal serves as the donor for said stem cells of step (a).

37 140. (New) The method of claim ³⁵138, wherein the mammal does not serve as the donor for said stem cells of step (a).

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38 141. (New) The method of claim 140, wherein the mammal is not treated with an immunosuppressive agent prior to step (b).

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39 142. (New) The method of claim 138, wherein the step of expanding is performed in the presence of an agent selected from the group consisting of Epidermal Growth Factor (EGF), basic Fibroblast Growth Factor-2 (bFGF-2), high glucose, Keratinocyte Growth Factor (KGF), Hepatocyte Growth Factor/Scatter Factor (HGF/SF), Glucagon-like-Peptide-1 (GLP-1), exendin-4, Islet/Duodenum Homeobox-1 (IDX-1), a nucleic acid molecule encoding Islet/Duodenum Homeobox-1 (IDX-1), betacellulin, activin A, Transforming Growth Factor- β (TGF- β), and combinations thereof.

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40 143. (New) The method of claim 138, wherein the step of transferring is performed via endoscopic retrograde injection.

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41 144. (New) The method of claim 138 additionally comprising the step of:

(e) treating the mammal with an immunosuppressive agent.

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42 145. (New) The method of claim 144 wherein said immunosuppressive agent prevents an immune response.

⁴¹
43 146. (New) The method of claim 144 wherein said immunosuppressive agent delays the occurrence of an immune response.

⁴¹
44 147. (New) The method of claim 144 wherein said immunosuppressive agent decreases the intensity of an immune response.

^{42 43 44}
45 148. (New) The method of claim 145, 146, or 147, wherein the immune response is transplant rejection.

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46 149. (New) The method of claim 144, wherein the immunosuppressive agent is selected from the group consisting of FK-506, cyclosporin, and GAD65 antibodies.

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